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## PROCEEDINGS OF SCIENTIFIC SOCIETIES.

**Biological Society of Washington, D. C.**—November 29, 1890.—Dr. T. H. Bean read a paper upon “The Death of Salmon after Spawning.” He called attention to the fact that the species of salmon upon the northwest coast belongs to a different genus from the salmon on the Atlantic coast, and one of the distinguishing features of the former was the dying of the fish after spawning. In the smallest species, known as the “little humpback,” the mortality is excessive, for every individual seems to die after spawning. It is a very abundant and widely spread species. It ascends the smaller streams and deposits its spawn, often a rod or less, or even within ten feet, of salt water, and yet it does not live to reach it again. The reason for this is unknown, but the fact is of great practical importance, for if the species spawns but once in its lifetime, if it is not to become extinct the mouths of the streams must be kept free from obstructions. This is not the case, so that if the fish cannot spawn naturally, it remains only for the Fish Commission to take the matter in charge, and rear the fish artificially.

In the largest species on the coast, when the individuals ascend the streams only about 75 miles, some return to the ocean; but when, as is sometimes the case, they penetrate 500, 1,000, and even 1,500 miles inland, the evidence all goes to show that none ever return to the ocean alive. With the silver salmon a large proportion return to the sea, because they spawn in the small and unobstructed streams, and they are not especially pugnacious. With the dog salmon the mortality is also said to be very great, nearly all dying after spawning.

In the discussion of this paper numerous interesting facts were brought out. Dr. Gill referred to a species of fish which might be termed an annual fish, inasmuch as it matures in a single year, and the young hatched from the spawn at the end of the season are all that remain to continue the species. He also alluded to the peculiar elongation of the upper jaw of the salmon which took place when the fish entered fresh water, and suggested it might be this structural change that caused the mortality.

Dr. Merriam referred to a large specimen of red salmon caught by one of his party on one of the tributaries of the Columbia River, a thousand miles from the ocean, that was four feet long and two feet in girth.

Dr. Theobald Smith spoke of "Species among Bacteria." He stated it to be possible to separate and study the various forms in a nutrient fluid. The species or forms can be separated by both morphological and biological characters. Among the former were enumerated form, size, formation of spores, method of germination, flagella, and staining. The biological characters are the results of culture, both in liquid and upon solid media. The forms can be distinguished by habitat, by the formation of ferments which liquify gelatine, by fermentation, by affinity for oxygen, by coloring matter, and by their occurrence in disease.

As examples of these differences the bacillus of anthrax and of hay were compared. They were long supposed to be closely related, and under the microscope both look alike, both grow in the same way, and both have spores of the same kind. But when the two are cultivated in a liquid the hay bacillus will form a scum upon the top of the liquid in a short time; the liquid will then become cloudy throughout, and finally clear up. With the anthrax, on the contrary, the cloud makes its appearance at the bottom of the culture tube. In germination of the spores, the anthrax grows in the direction of the larger diameter, while the other grows at right angles to it. If the hay bacillus be placed under the skin of an animal, it is innocuous. But if the anthrax be injected, it will kill in twenty-four hours.

Again, in the typhoid fever and the hog cholera bacillus there is great similarity in morphological characters; but when cultivated they assume different colors. In the fermentation tube hog-cholera germ evolve gases, while the typhoid do not. One form of the comma bacillus cultivated on gelatine liquifies it; another similar form does not.

In the discussion Mr. True thought the morphological characters were those which characterized higher groups than species; they were rather family, perhaps ordinal, characters. Dr. Smith, in replying to this, stated that it was impossible to say what were family, what were generic, what were ordinal characters, but those he had mentioned were of use in distinguishing the various forms one from another.

[In the course of the discussion the fact that the organisms under consideration were of vegetable rather than animal nature was lost sight of. While, therefore, the morphological characters of form, size, spores, etc., referred to would not do to separate species of animals, they are exactly the characters used by botanists to separate species of plants. Dr. Smith, therefore, in stating that species could be separated

upon the morphological characters of form, size, etc., gave characters which are of *specific* value in plants, though they may not be so in animals.—J. F. J.]

**Geological Society of America.**—Second annual meeting, Washington, D. C., Dec. 29, 30, and 31, 1890.—The following papers were read: On the Geology of Quebec and its Environs; Henry M. Ami. Antiquities from under Tuolumne Table Mountain, California; On the Early Cretaceous of California and Oregon; The Structure of a Portion of the Sierra Nevada of California; George F. Becker. The Nickel and Copper Deposits of Sudbury District, Canada; Robert Bell. The Chazy Formation in the Champlain Valley; Ezra Brainerd. Remarks on a Fallen Forest and Peat Layer Underlying Aqueous Deposits at Naaman's Creek, Del.; Hilborne T. Cresson. Mineral and Chemical Composition of Certain Igneous Rocks from the Mesozoic Area in Culpepper County, Virginia; H. D. Campbell and W. G. Brown. A Proposed System of Chronologic Cartography on a Physiographic Basis; T. C. Chamberlin. An Account of the Geology of the Washington Region; On a Jointed Earth-Auger for Geological Exploration in Soft Deposits; Nelson H. Darton. The Geological Date of the Origin of Certain Topographic Forms on the Atlantic Slope of the Eastern United States; W. M. Davis. Two Fossil-Bearing Belts in the Triassic Formation of Connecticut; W. M. Davis and S. W. Loper. Illustrations of the Structure of Glacial Sand-Plains; W. M. Davis and H. L. Rich. Note on the Geological Structure of the Selkirk Range, in the Vicinity of the Line of the Canadian Pacific Railway; George M. Dawson. Note on the Carboniferous Flora of Newfoundland; Sir William Dawson. The Triassic Sandstones in Massachusetts; B. K. Emerson. Glacial Grooves South of the Terminal Moraine; F. Max Foshay and Richard R. Hice. The Overthrust Faults of the Southern Appalachians; C. Willard Hayes. The Quaternary Formations of the Southwest; E. W. Hilgard. On the Probable Upper Jurassic and Basal Cretaceous Beds of the Texas-Arkansas Region, Coastward of the Present Paleozoic Areas, Together with Remarks on Preëxisting Conditions and Subsequent Erosion; R. T. Hill. The Phosphate Deposits of the Island of Navassa, W. I.; E. V. D'Inwilliers. The Structure of the Blue Ridge Near Harper's Ferry; Arthur Keith and H. R. Geiger. A Geological Section Across Paris Ridge; The Detailed Stratigraphy of the Carbonic of Central Iowa; Charles R. Keyes. Exhibition of Some New Petrographical Microscopes; A. C. Lane. Notes on Variations in the Tertiary and Cretaceous Strata of Alabama; Daniel W. Langdon, Jr. On Tertiary and Post-Tertiary Changes in Physical Geography on the

Western as Compared with the Eastern Side of the American Continent ; A Note on the Mutual Relations of Land Elevation and Ice Accumulation During the Quaternary Period ; Joseph LeConte. Geology of the Environs of Quebec ; Jules Marcou. The Coal Fields of Alabama ; Henry McCalley. The Melting of the Northern Ice Sheet in North-eastern Iowa ; W J McGee. Contribution to the Geology of Georgia ; P. H. Mell. The Post-Archæan Age of the White Limestones of Sussex County, New Jersey ; Frank L. Nason. Relations of Secular Rock Disintegration to Certain Crystalline Schists ; Ralph Pumpelly. Glaciers of the St. Elias Region, Alaska ; I. C. Russell. On the Geology of Little Falls, New York ; N. S. Shaler and H. S. Williams. The Railroads and the Geology Classes in Alabama ; Eugene A. Smith. Notes on Two Moraines in the Catskill Mountains, New York ; J. C. Smock. Post-Pliocene Continental Subsidence ; J. W. Spencer. Geological Notes on Mount Diablo, California ; H. W. Turner. Glacial Lakes in Canada ; Warren Upham. The Cinnabar and Bozeman Coal Fields of Montana ; Walter H. Weed. A Last Word with the Huronians ; Alexander Winchell. On the Structure and Petrography of the Piedmont Plateau in Maryland ; George H. Williams. Graphic Field Notes for Areal Geology ; Bailey Willis. On the Lower Cambrian Age of the Stockbridge Limestone at Rutland, Vermont ; J. E. Wolff. Observations Upon the Lava Deposits of the Snake River Valley, Idaho ; G. Frederick Wright. (*To be continued.*)

**Industrial and Scientific Society of Alabama.**—The Alabama Industrial and Scientific Society was organized at the University of Alabama, Thursday, December 11th, 1890, with 70 members. Its objects are the promotion of the industries of the State, and the furtherance of scientific investigations of the problems arising in civil and mining engineering, geology, smelting, and the manufacture of coke. The officers for 1891 are: President, C. Cadle, general manager, Cohaba Coal Mining Co., Biocton. Six vice presidents, viz., Thomas Sedcon, president Sloss Iron and Steel Co., Birmingham ; C. P. Williamson, president Williamson Iron Co., Birmingham ; W. E. Robertson, city engineer, Anniston ; J. W. Burke, president, Tredegar Co., Jacksonville ; M. C. Wilson, professor natural science, Normal School, Florence ; Col. Horace Harding, U. S. engineer, Tuskaloosa ; Treasurer, Henry McCalley, Alabama Geological Survey, University Alabama ; Secretary, Wm. B. Phillips, professor Chem. and Met. University Alabama. The annual fee is \$5.00. The society will meet three or four times a year at different places in the State for the

reading and discussion of papers, which will afterwards be published. The next meeting will be held in Birmingham, January 28th, 1891.

**The American Morphological Society.**—A well-attended meeting for the inauguration of an American Morphological Society was held in the Massachusetts Institute of Technology, Boston, on December 29th and 30th, 1890. Officers for the meeting were elected as follows:

President, Professor E. B. Wilson; Secretary and Treasurer, Dr. J. Playfair McMurrich; Executive Committee: Professor E. L. Mark, Dr. C.-S. Minot, and Dr. E. A. Andrews.

After the details of meeting had been completed, the following papers were read and discussed: On the Development of the Scyphomedusæ; J. Playfair McMurrich. On the Intercalation of Vertebræ; G. Baur. The Heliotropism of Hydra: a Study in Natural Selection; E. B. Wilson. The Early Stages of the Development of the Lobster; H. C. Bumpus. Some Characteristics of the Primitive Vertebrate Brain; H. F. Osborn. The Development of Nereis and the Mesoblast Question; E. B. Wilson. The Præoral Organ of Xiphidium; W. H. Wheeler. A Review of the Cretaceous Mammalia; H. F. Osborn. Spermatophores as a Means of Indirect Impregnation; C. O. Whitman. The Phylogeny of the Actinozoa; J. Playfair McMurrich.

The following are the officers of the society for the ensuing year: President, C. O. Whitman; Vice President, Professor E. L. Mark; Secretary and Treasurer, Dr. J. Playfair McMurrich; Executive Committee: The Officers of the Society, Professor E. B. Wilson, and Professor H. F. Osborn.

**Third Annual Meeting of the Association of American Anatomists.**—Held at Boston, Mass., on December 29th, 30th, and 31st, 1890.—Monday, December 29th.—The Homology of the Cerebro-Spinal Arachnoid with the other Serous Membranes; F. W. Langdon, M.D., Cincinnati, Ohio. Something Additional About the Human Sternum; D. S. Lamb, Washington, D. C. The Merits and Defects of Owen's Account of the Cerebral Fissures; Burt G. Wilder, M.D., Ithaca, N. Y. On the Teeth of Cheiroptera; Harrison Allen, M.D., Philadelphia, Pa. Studies on the Spine; Thomas Dwight, M.D., Boston, Mass. Corrosive Preparations by Different Methods; S. F. Mixter, M.D., Boston, Mass. The Relations of the Olfactory to the Cerebral Portion of the Brain; Burt G. Wilder, Ithaca, N. Y. An Unusual Case of Platycnemy in the Negro; Frank Baker, M.D., Washington, D. C.

Tuesday, December 30th.—Subfrontal Gyri and Problems Connected with the Cerebral Fissures; Burt G. Wilder, M.D., Ithaca, N. Y. A Comparison of the Fibrine Filaments of Blood Lymph in Mammalia and Batrachia, with Methods of Preparation; Simon H. Gage, M.D., Ithaca, N. Y. The Semilunar Bone; Francis J. Shepard, M.D., Montreal, Canada. On the Structure of Protoplasm and Mitosis (Demonstration); Carl Heitzmann, M.D., New York City. A Specimen, George McClellan, M.D., Philadelphia. Corrections of the Article "Gross Anatomy of the Brain," in Wood's Reference Hand-Book of the Medical Sciences; Burt G. Wilder, M.D., Ithaca, N. Y.

**The American Ornithologists' Union.**—The Eighth Congress of the American Ornithologists' Union was held in the Lecture Hall of the United States National Museum, Washington, D. C., on November 18th, 19th, and 20th, 1890, and was attended by a large number of active and associate members from all parts of the country. The first day's session was devoted to business. Dr. J. A. Allen, of New York, who has been president of the Union since its foundation, declined reelection, and Mr. D. G. Elliot was elected to succeed him in the presidency. The succeeding days were set apart for the reading of scientific papers, of which the following is a list:

November 19th.—1. The American Ornithologists' Union: A Seven Years' Retrospect; J. A. Allen. An interesting review of the work done in American ornithology since the founding of the Union. 2. Seed-Planting by Birds; Walter B. Barrows. A valuable contribution to economic ornithology based upon the system of stomach examinations now being conducted by the Department of Agriculture. 3. A Study of Bird Waves in the Delaware Valley during the Spring Migration of 1890; Witmer Stone. This paper gave a brief review of the work done by the Delaware Valley Ornithological Club, of Philadelphia, in the investigation of bird migration, and illustrated by a system of charts a new method for the graphic arrangement of migration data. 4. Our Present Knowledge of the Neotropical Avifauna; Frank M. Chapman. An excellent review of the work that has been done on the birds of the western tropics, up to the present time. 5. The Present Status of the Ivory-billed Woodpecker; E. M. Hasbrouck. By carefully-prepared maps Mr. Hasbrouck contrasted the former extensive distribution (nearly throughout the Austro-riparian fauna) of this elegant bird, and its present restricted range in Florida and the southernmost portions of some of the other Gulf States, and showed that in the near future this species will become a thing of the past. 6. Phalaropes at Swampscott, Mass; Wm. A. Jeffries—read by Mr. Chap-

man. 7. The Spring Migration of the Red Phalarope ; Harry Gordon White—read by Dr. Allen. This paper gave the results of observations on this bird during a voyage from Massachusetts to the Gulf of St. Lawrence, and indicated that the birds, in the spring of 1890, after following the southern coast of Nova Scotia, passed through the Gut of Canso, instead of rounding Cape Breton Island. 8. Some Observations on the Breeding of *Dendroica vigorsii* at Raleigh, N. C.; C. S. Brinley—read by Mr. Chapman.

November 20th.—9. The Trans-Appalachian Movement of Birds from the Interior to the South Atlantic States, Viewed Chiefly from the Standpoint of Chester Co., S. C.; Leverett M. Loomis. 10. The Birds of Andros Island, Bahamas ; John I. Northrop. An interesting account of the birds of this (ornithologically) little-known island, where Mr. Northrop was fortunate enough to discover a fine new species of *Icterus* (*I. northropi* Allen.) Dr. Allen made some additional remarks upon the birds collected by Mr. Northrop, exhibiting a number of specimens. 11. Some Bird Skeletons from Guadalupe Island ; Frederic A. Lucas. 12. On the Tongue of Humming-Birds ; F. A. Lucas. 13. Remarks on the Primary Faunal Divisions of North America ; C. Hart Merriam. In this able paper Dr. Merriam explained his recently-published Faunal Map of North America, and gave his grounds for abolishing the generally-adopted system of dividing the continent into three great provinces,—Eastern, Central, and Western,—and for deriving the various faunal districts from two primary regions—Boreal and Sonoran. The paper was illustrated by a large series of maps showing all the faunal divisions of the North American continent that have hitherto been proposed by authors.

After this paper, Mr. William Brewster exhibited a number of excellent lantern slides from photographs of wild birds taken in the field.

The following papers were presented, but were not read for lack of time : An Experimental Trial of a New Method for the Study of Bird Migration ; Harry Gordon White. The Case of *Colaptes auratus* and *C. cafer* ; J. A. Allen. Observations upon the Classification of the United States Accipitres—Based upon a Study of their Osteology ; R. W. Shufeldt. Some Notes Concerning the Evening Grosbeak ; Amos W. Butler. Owls of Illinois ; W. S. Strobe. Instinct, Intuition, and Intelligence ; C. F. Amery. The Habits of the American Golden Plover in Massachusetts ; Geo. H. Mackay. Correction to Revised Catalogue of the Birds of Kansas ; N. S. Goss. Second Occurrence of the White-Faced Glossy Ibis in Kansas ; N. S. Goss.—W. S.